

Quarterly Report – Public Page

Date of Report: **December 14, 2008**

Contract Number: **DTPH56-08-T-000012**

Prepared for: **U.S. Department of Transportation, Pipeline and Hazardous Materials
Safety Administration**

Project Title: **Improvements to the External Corrosion Direct Assessment (ECDA)
Process (WP#360): Potential Measurements on Paved Areas**

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For quarterly period ending: **December 14, 2008**

The following major activities were completed during the subject reporting period:

- Controlled field measurements to determine in-situ asphalt surface electrical resistance
- Controlled field measurements to determine in-situ potentials on different paving types – asphalt, concrete and asphalt
- Completion of field studies for a Corrpro CIS and DCVG project in Delaware with data applicable to the PHMSA research

The in-situ asphalt resistance data provides insight to the range in resistances that can be expected. The resistance measurements are important relative to the electrical circuit and instrumentation used if one were to attempt to make reliable DC pipe-to-soil potential measurements through asphalt paving without drilling holes. The asphalt resistances range from 5.5×10^5 ohm-feet² (surface cracking) to in excess of 2×10^9 ohm-feet² (no visible surface cracking, in excess of maximum measurable resistance). Further research in this area is appropriate. This includes evaluating the impact of abrading the surface of the asphalt to determine its impact on potential measurements without drilling holes.

Considerable variability was observed in the in-situ potential measurements, particularly for asphalt and concrete. Continued research in this area is warranted to determine and document influencing factors. Of all the paving types evaluated, gravel exhibits the smallest variation when compared to the corresponding potential on soil. A consistent method for placing the reference electrode atop the gravel is worth pursuing in hopes of minimizing these differences to an acceptable level. A target of +/- 0.02 volt seems feasible.

Results of the Delaware project are being analyzed. Results applicable to the PHMSA research will be included in the next quarterly report.

In conjunction with its corporate team partners, Corrpro will be identifying candidate field projects for research activities to be undertaken over the next several months in accordance with the project scope for *Potential Measurements on Paved Areas*. The degree of success, in this regard, will depend heavily on new project opportunities.